

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application. Claims 1-13 are now present in this application. No amendments to the claims are presented in this response. Accordingly, no new matter has been added by way of the present amendment.

In view of the remarks herein, Applicants respectfully request that the Examiner withdraw all outstanding rejections and allow the currently pending claims.

Issues Under 35 U.S.C. § 103(a)

Claims 1-13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tahara et al. (Pub. No. US 2002/0026003) (hereinafter Tahara '003) in view of Corvasce et al. (U.S. 5,672,639) (hereinafter Corvasce '639). This rejection is respectfully traversed.

The Examiner asserts that Tahara '003, disclosing inorganic powders having an average particle size of less than 25 μm , renders Applicants' rubber composition obvious. The Examiner further asserts that "given the breadth of the claimed range and the prior art is only 5 μm different from the claimed particle size...the claimed 30 μm is *prima facie* obvious from the disclosed 25 μm ". Applicants respectfully disagree.

Applicants respectfully submit that the Examiner has failed to establish a *prima facie* case of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the teachings of the references to obtain the invention. Second, there must be a

reasonable expectation of success in making the invention. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on Applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

The present invention is directed to a rubber composition that, based on 100 parts by weight of diene rubber (A), comprises 2 to 20 parts by weight of short fiber (B) having an average fiber diameter of 10 to 100 μm and average fiber length of 0.01 to 4 mm, 1 to 10 parts by weight of particles (C) having a Moh's hardness of at least 5 and **average particle size of 30 to 500 μm** (emphasis added), and 1 to 15 parts by weight of a starch/plasticizer composite material (D) (claim 1).

Tahara '003 discloses a rubber composition comprising diene rubber, glass fibers, a reinforcing agent and 1-15 parts by wt. of inorganic powder softer than the glass fibers and having an average particle size of "less than 25 μm ." Tahara '003 is thus fundamentally different from the present invention, in which claim 1 recites a particle size of "30 to 500 μm ." From this difference in particle size, the surface of the short fiber in Tahara '003 is difficult to scratch, and an improved effect of digging friction cannot be obtained because the average particle size of Tahara'003 is too small. Corvasce '639 does not cure these deficiencies.

Applicants respectfully submit that a range of "less than 25 μm ", as disclosed by Tahara '003, does not render Applicants' claimed range and inventive rubber composition obvious. The claimed particle size of the present invention does not overlap with the range disclosed by

Tahara '003. Tahara '003 does not provide any suggestion or motivation to modify the particle size as presently claimed.

It has been unequivocally established that a *prima facie* case of obviousness may be rebutted by showing that the art, in any material respect, teaches away from the claimed invention. *In re Geisler*, 116 F.3d 1465, 43 USPQ2d 1362 (Fed. Cir. 1997). Furthermore, if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Tahara '003 discloses that "inorganic powders having too large average particle size tend to decrease the abrasion resistance" (Tahara '003 at [0038]). For this reason, Tahara '003 discloses that the inorganic powders have an average particle size of "less than 25 μm " and preferably "not more than 20 μm " (*Id.*). One skilled in the art, upon reviewing the disclosure of Tahara '003, would have shunned away from making the modification proposed by the Examiner.

Corvasce '639 fails to cure the deficiencies of Tahara '003. As previously discussed, Corvasce '639 is silent about combining short fibers and particles, and the effect to be obtained therefrom. Also, in the Examples of Corvasce '639, the particles are not blended. Therefore, one skilled in the art would have no teaching or suggestion that would provide motivation to assume that the average particle size of the particles has an influence on digging friction. Corvasce '639 thus fails to disclose or suggest blending both short fibers and the particles having a particle size of "30 to 500 μm " to improve the digging friction by scratching the short fiber. Corvasce '639

thus fails to address the deficiencies of Tahara '003 in suggesting a claimed embodiment of the present invention.

Furthermore, the unexpected results obtained by Applicants rebut any potential *prima facie* showing established by the Examiner. *Iron Grip Barbell Co., Inc. v. USA Sports, Inc.*, 392 F.3d 1317, 73 USPQ2d 1225 (Fed. Cir. 2004). For purposes of illustration and not limitation, the Examiner's attention is directed to the attached Declaration Under 37 C.F.R. 1.132.

Experiments were conducted to determine the criticality of the average particle size of particles (C) in rubber compositions. Data comparing Experimental Examples 1-3 and Applicants' previous Example 1 (as described in Applicants' Specification at pages 14-16) is presented in Table 1 of the attached Declaration. As evidenced by the results obtained by Experimental Examples 1-3 and Applicants' Example 1, while the performance of the tires on ice and snow is comparable in all the Examples, wet gripping properties are considerably and unexpectedly improved in Comparative Example 3 and Applicants' Example 1, which utilize particles having average particle sizes of 35 and 100 μm , respectively. In stark contrast, Comparative Examples 1 and 2, utilizing particles having average particle sizes of 0.6 and 25 μm , respectively, do not exhibit improved wet gripping properties. Clearly, Applicants have obtained unexpected results by utilizing a rubber composition comprising particles (C) having average particle sizes in the range of 30 to 500 μm .

The cited references, alone or in combination, fail to teach or suggest every limitation of the present invention. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and objections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action and, as such, the present application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Andrew D. Meikle, Reg. No. 32,868 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

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Respectfully submitted,

By 

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Attachment: Executed Declaration Under 37 C.F.R. 1.132